



Open/close controller for AC drives

UMS 5

UMS U5

UMS 5P

(rail mounting versions: 230V AC, 24V UC)

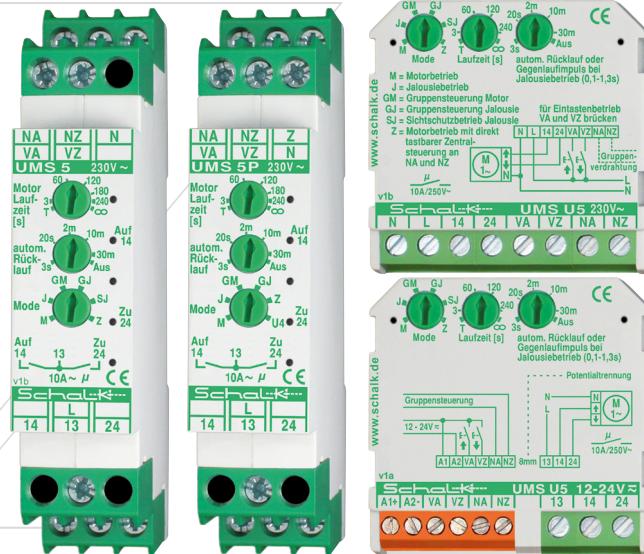
(flush mounting version: 230V AC, 12-24V UC)

(rail mounting version 230V AC, electrically isolated auxiliary inputs)

Universal motor controller for **AC motors** (roller shutters and louver blinds, hinged shutters, skylights, smoke extractor hoods in fire protection systems, gate drives, valve controls, etc.) with auxiliary inputs for group and central control

Special features

- ▶ very low power consumption:
only 0.2W passive / 0.4W active
- ▶ positioning of blinds also by group or central control
- ▶ One or two button control
- ▶ Electronic button interlock
enables use of normal push-buttons
- ▶ UMS 5: potential-free output contacts
- ▶ UMS 5P: galvanically isolated auxiliary inputs für
Universalspannung 12-230V UC
- ▶ Specific louvre blind modes
for convenient louvre adjustment and privacy function
- ▶ Automatic closing function
with configurable closing time; long button press doubles closing time
- ▶ Run-time limiting for motor protection
- ▶ rail and flush mounting versions available



General information

The UMS electronic controllers are general-purpose AC motor controllers for clockwise or anti-clockwise operation. They support both one-button and two-button motor control. The overriding auxiliary inputs allows several UMS units to be grouped together in group control or central control configurations.

The motor run time can be limited to prevent motor overload due to mechanical jamming or other causes. A convenient and configurable automatic closing function ensures that skylights or other fixtures are not inadvertently left open. In louvre blind mode the louvres can be adjusted precisely or automatically returned to a defined angle after switch-off.

Applications

Roller shutters and louver blinds, shutters, skylights, smoke extraction hoods in fire protection systems, door drives, valve drives, etc.

Operation

The UMS is actuated by standard push-buttons with no need for mechanical interlocking.

The desired operation direction is selected by a short pulse (momentary-action signal) from a push-button connected to the VA (local input for Open) or VZ (local input for Close) input. The drive runs to its end stop and the configured time expires.

A subsequent pulse on the VA or VZ input while the drive is running stops the motor. For **one-button motor control** it is also possible to actuate both local inputs at the same time with just one push-button (not in SJ mode). With this actuation arrangement, each button pulse changes the direction (Open-Stop-Close-Stop).

The **auxiliary inputs** NA (Open) and NZ (Close) allow any desired number of drives to be operated simultaneously in the opening or closing direction, regardless of their current state. When actuated by the auxiliary inputs, the motor runs only as long as the actuation signal from the higher-level group controller is active. The NA input has priority when NA and NZ signals are active at the same time. The local inputs are blocked as long as NA or NZ is active.

When the UMS is used as a **group controller**, there is no time monitoring of the auxiliary inputs. This allows the lower-level controllers to be held in the desired position for an indefinite period (e.g. wind sensors).

In **louver blind mode** the drive is stopped immediately after a short pulse is applied to a local input. With a longer pulse the drive continues running to the end position. This enables louvre angle adjustment by short button presses. In one-button louvre blind mode, the direction of motion is not altered by a sequence of short pulses. Here again, this makes it easy to adjust the louvers.

In **SJ mode (louver blind privacy)** a short push-button signal on the VA or VZ local input changes the angle of the louvers,

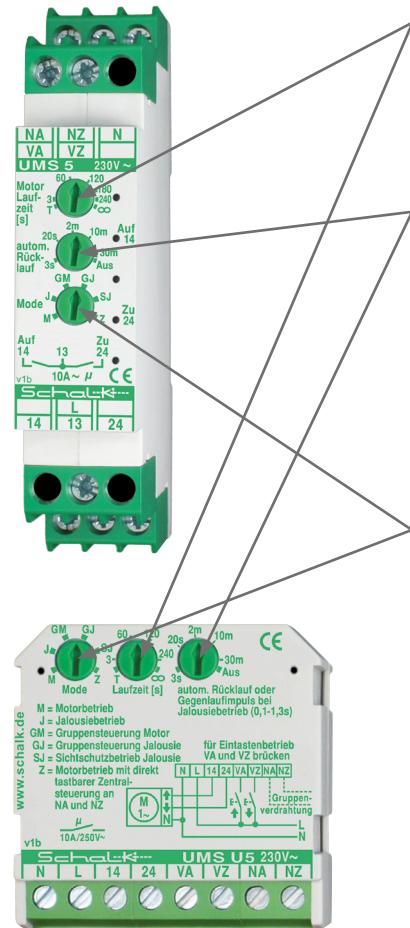
for example from vertical to horizontal (privacy on/off). The motor run time for this angle adjustment can be set from 0.1 to 1.4 s. A triple button press initiates the full motor run time (setting range 3 to 240 s).

If **automatic closing** is enabled, the drive starts moving in the closing direction after the set closing time delay. The time-out is started by the signal on the VA local input.

If the signal on the VA input is active longer than 2 seconds, the closing time is doubled. In louver blind mode a reverse pulse is configured instead of the closing function, so that the louvers are automatically reset after the motor stops.

Central push-button motor control mode (Z) enables simple central control in relatively small systems without a higher-level group controller. The auxiliary inputs can be actuated by push-buttons in the same way as the local inputs, but they take priority.

Controls and indicators



Motor run time setting „Motor-Laufzeit“:

This sets the motor run time:

T Button mode (motor runs only when an input signal is active)

3-240 Motor run time in seconds

∞ No run time limit

Automatic closing time setting „autom. Rücklauf“:

This sets the automatic closing time, reverse pulse time or louvre run time:

In **motor control mode (M)**:

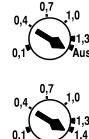
Time for automatic closing function **3 s to 30 min** or **Off** (function disabled)

In louver blind control mode (J):

Duration of reverse pulse **0.1 to 1.3 s** or **Off** (function disabled)

In louver blind privacy mode (SJ):

Louvre run time **0.1 to 1.4 s**



Mode setting „Mode“:

This sets the operating mode:

- M Motor control
(short button press for Open, Close or Stop)
- J Louvre blind control
(short button press for fine adjustment of louvre angle or stop; long button press for open/close)
- GM Group device for motor control*
(no time monitoring)
- GJ Group device for louvre blind control*
(no time monitoring)
- SJ Only **UMS 5/U5**: Louvre blind privacy
(short button press sets privacy on or off; triple button press to adjust blind position)
- Z Central push-button motor control
(all inputs operated by push-buttons)
- U4 Only **UMS 5P**: mode for downwards compatibility to UMS 4

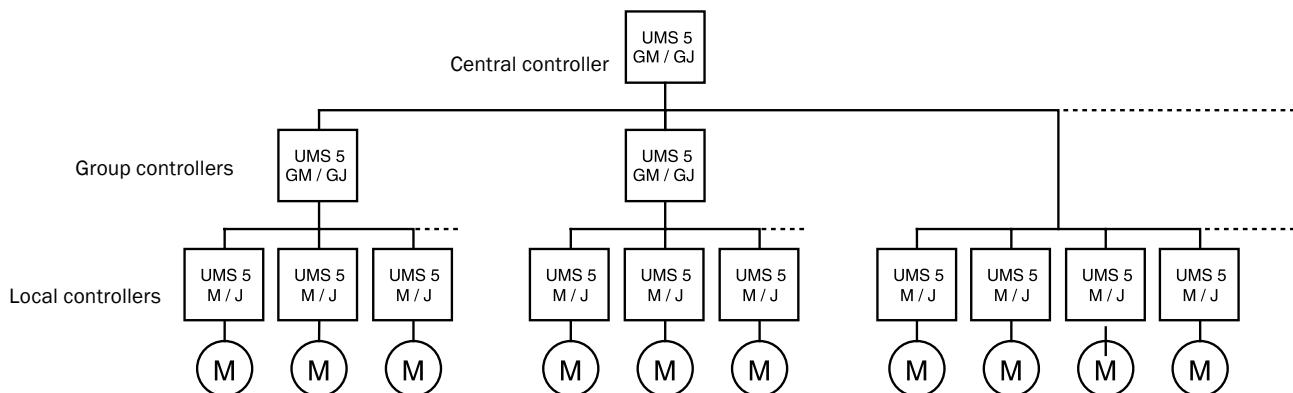
* In mode GM or GJ, relay output M1 or M2 (14 or 24) is continuously closed as long as an active signal is present on an auxiliary input. This enables override actuation (with local inputs blocked) by sensors (wind sensor, rain sensor, etc.).

In mode „U4“ the UMS 5P behaves as the former model UMS 4, and therefore can be used as a replacement device or for extension of older equipment. In this mode, the motor only stops when button is pressed at VA or VZ, and doesn't change direction.

Status indicator LEDs:

- LED off
- LED lit red
- ⊕ LED blinks red
- LED lit green
- ⊕ LED blinks green
- LED blinks alternating red/green

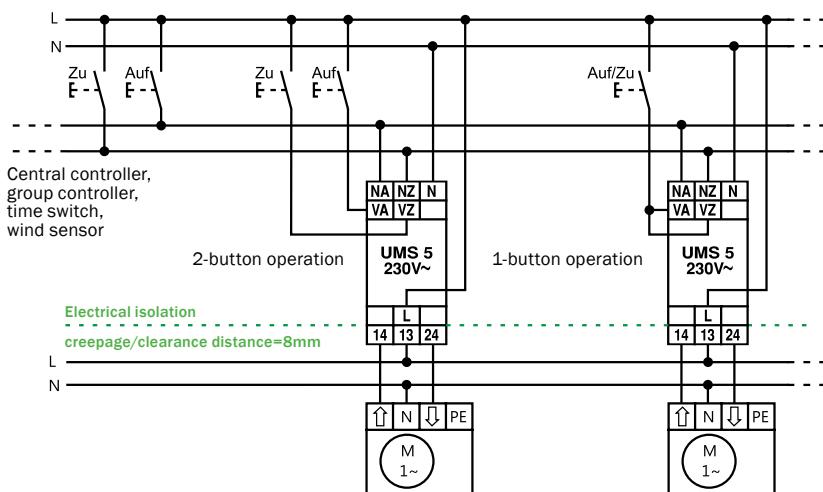
Basic circuit diagram for group/central control



Example connection diagrams

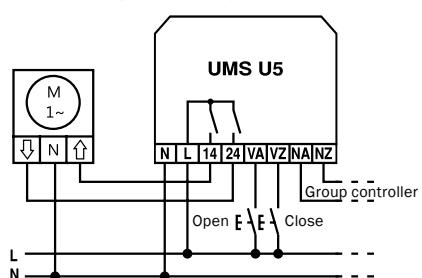
2-button operation oder 1-button operation

UMS 5 (230V AC):



The UMS 5 (230V AC) model supports the assignment of different phases for the supply voltage, the local inputs and auxiliary inputs.

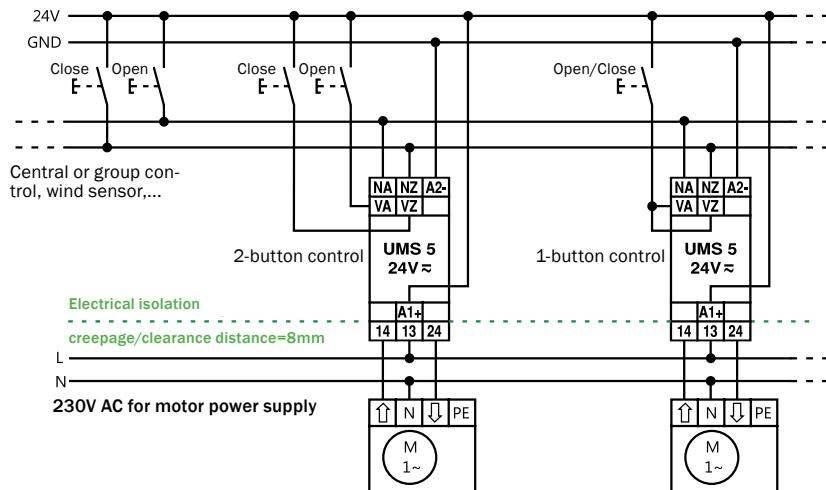
UMS U5 (230V AC):



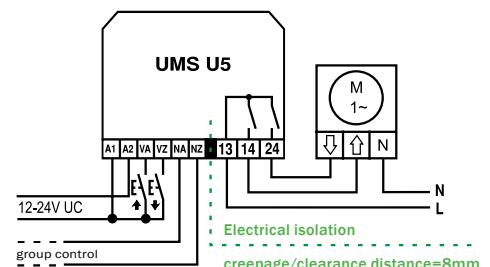
Attention!

For UMS U5 supply voltage and control voltages must be identical (same phase).

UMS 5 (24V UC):

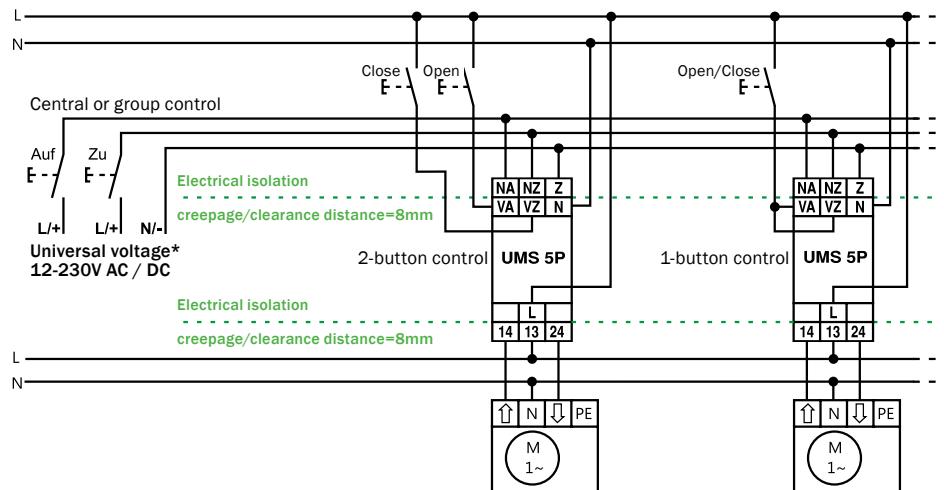


UMS U5 (24V UC):



The (24V UC variant (UMS504) and the 12-24V UC variant (UMSU5V)-need 24V respectively 12-24V UC both for supply and control voltage. However the potential-free relay contacts can drive 230V motors.

UMS 5P (230V AC)

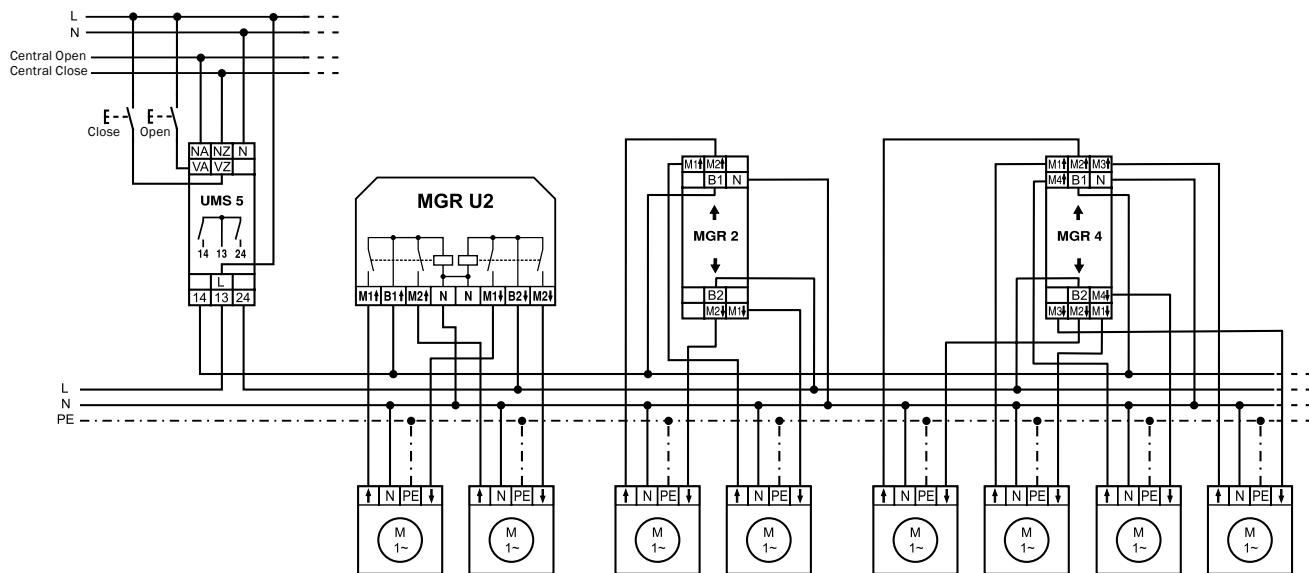


The UMS 5P auxiliary inputs are electrically isolated. The auxiliary inputs can thus also be controlled from different phases of the power network. Allowed control voltage: 12V - 230V AC or DC.

Info

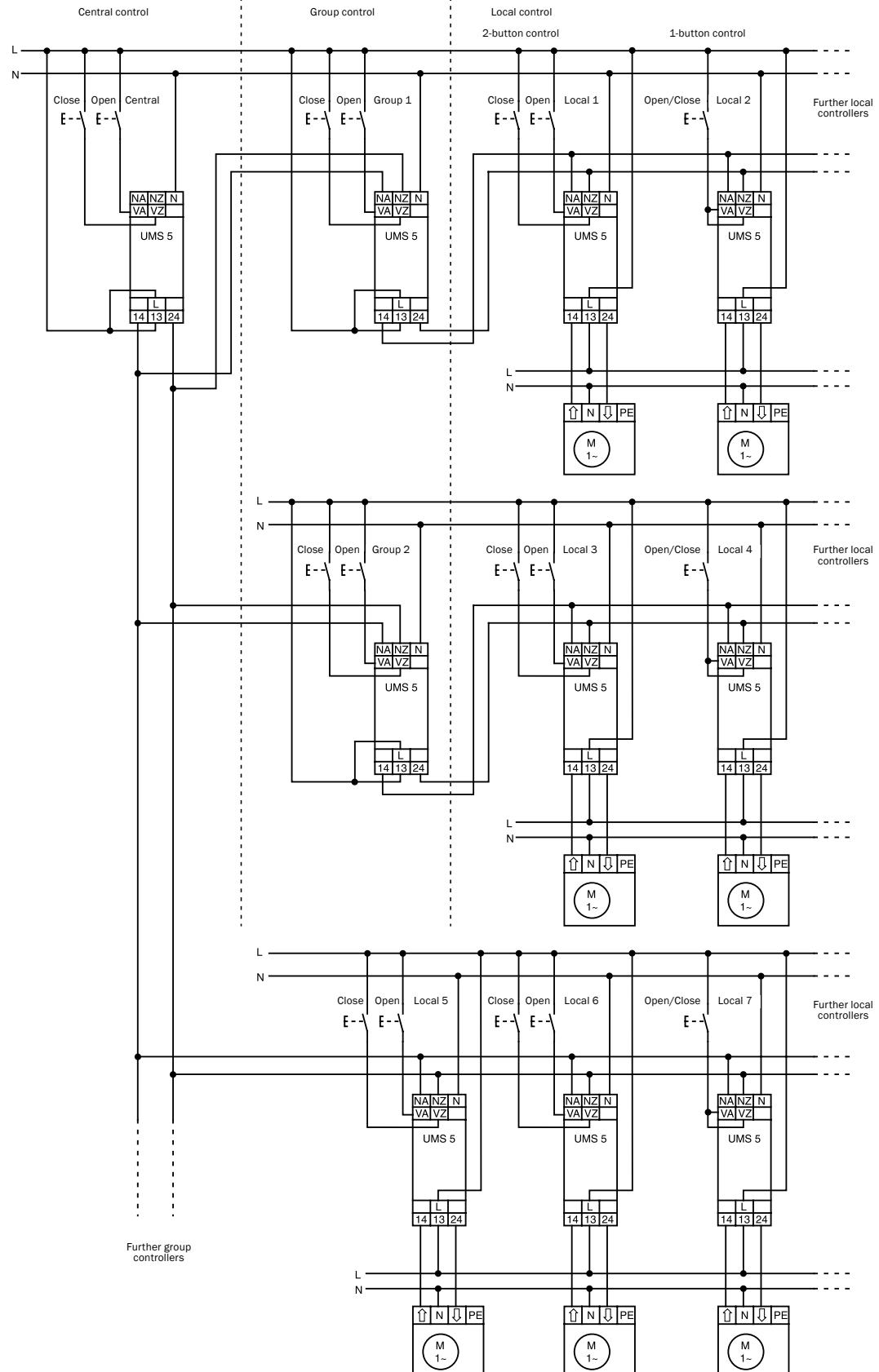
The electrically isolated auxiliary inputs of the UMS 5P should not be permanently actuated when driven with 230V, since this leads to increased heating.

Several motors controlled by one UMS 5 - decoupled with MGR U2


Attention!

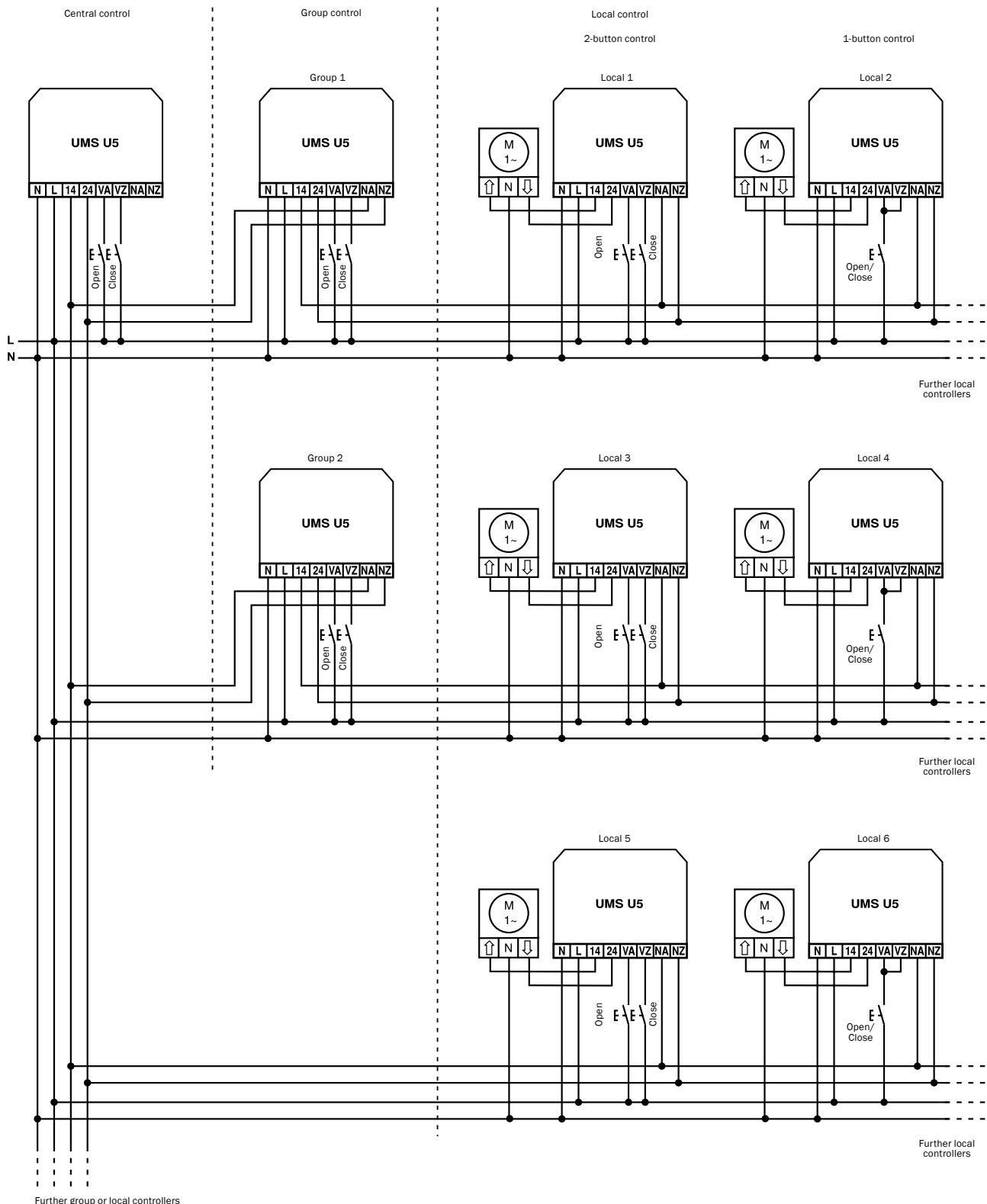
Roller shutters or louver blind motors with mechanical limit-switches must as a rule not be electrically connected directly in parallel, because due to the different motor running times the limit-switches of some motors may be reached while other motors are still running. The motors that are already switched off would then receive inductive voltage at the counterwinding from the motors that are still running, which can lead to destruction of the limit switches. The devices of the MGR series provide an extremely simple method of achieving a (functional) parallel circuit: e.g. an MGR U2 is simply inserted upstream of each motor.

Typical application: UMS 5 in group and central control

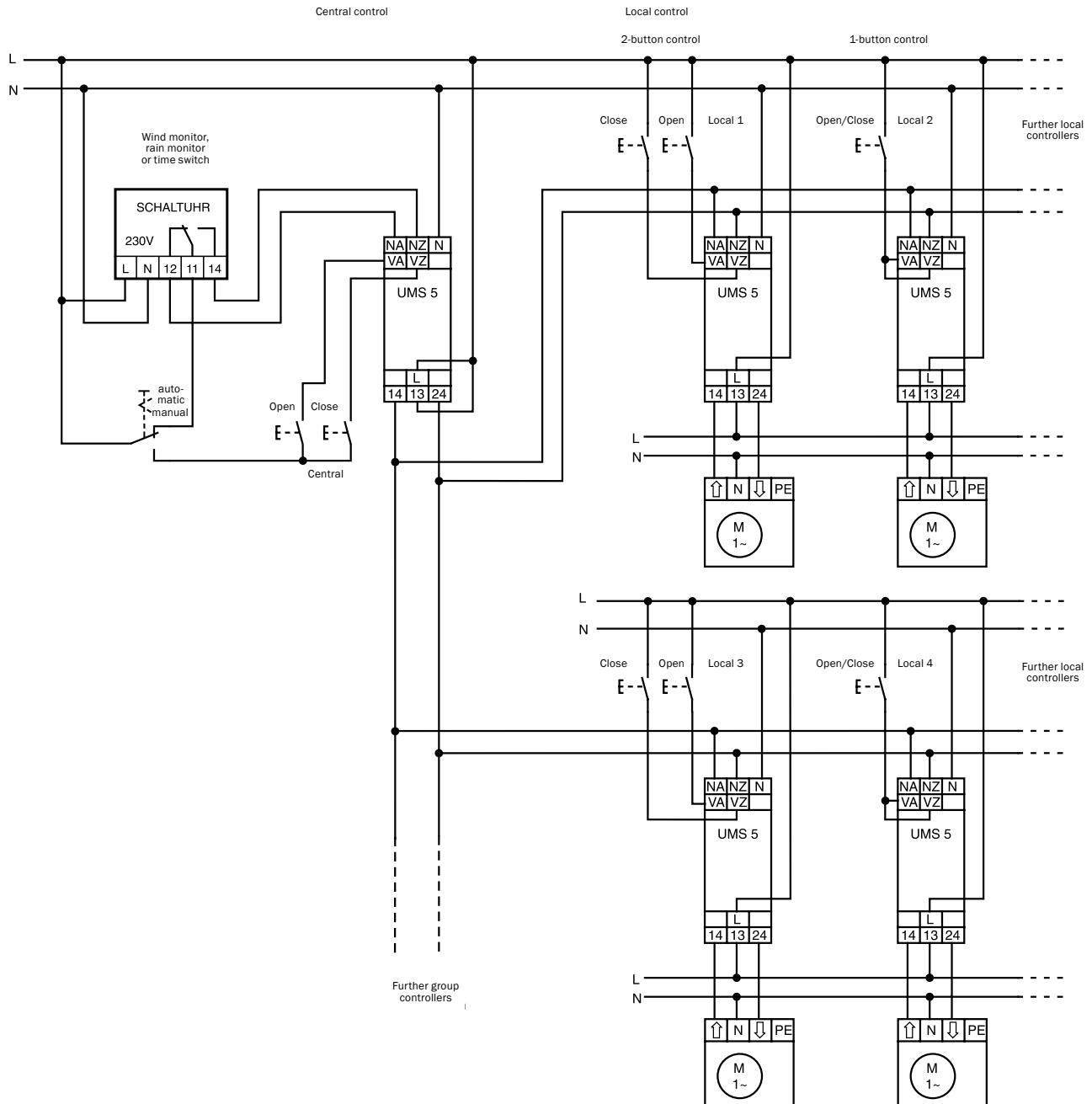


Motor controllers

Typical application: UMS U5 (230V AC) in group and central control



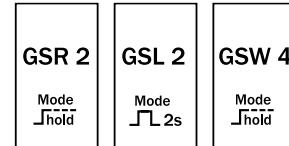
Typical application: UMS 5 central control with manual or automatic operation



System Design: Limit Switches

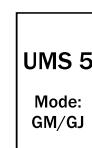
In combination with UMS 5 or UMS U5 open/close controller

Limit switches
for rain, light or wind



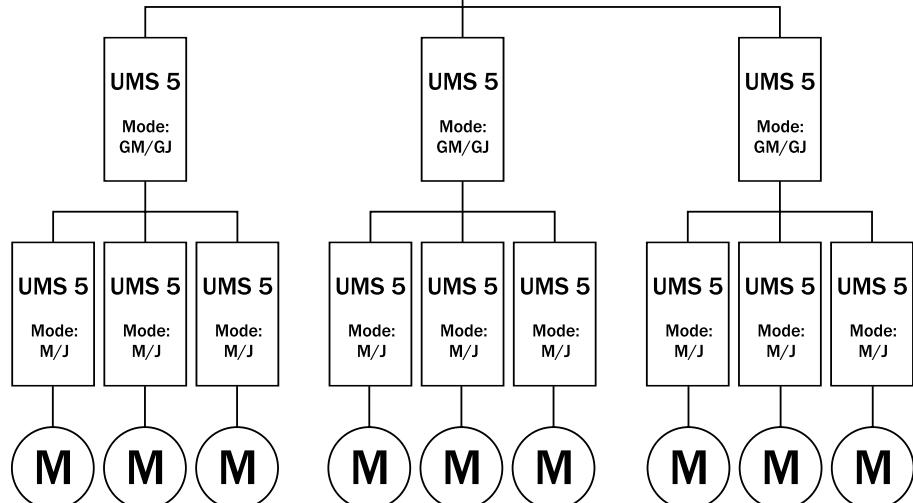
Central controller

The central controller is actuated by sensors and associated limit switches



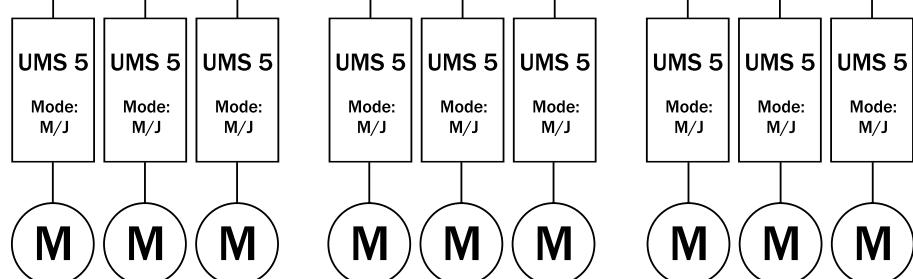
Group controllers

are actuated by the central controller and push-buttons



Local controllers

The individual local controllers are actuated by the group controller and their own push-buttons



Local controllers

Each UMS 5 controls a drive through outputs 14 and 24. It is actuated by signals on the local inputs (VA and VZ) from conventional double push-buttons. Travel direction interlocking and run time limiting are ensured by the UMS 5.

Group and central controllers

Several UMS 5 units can be grouped together by simply connecting their auxiliary inputs (NA and NZ) in parallel. They can be actuated jointly by connecting another (higher-level) controller ahead of them. This creates a **group**. Group controllers can in turn be grouped together in the same way and actuated jointly by a higher-level controller. This further grouping is called **central control**.

Rain, wind and light

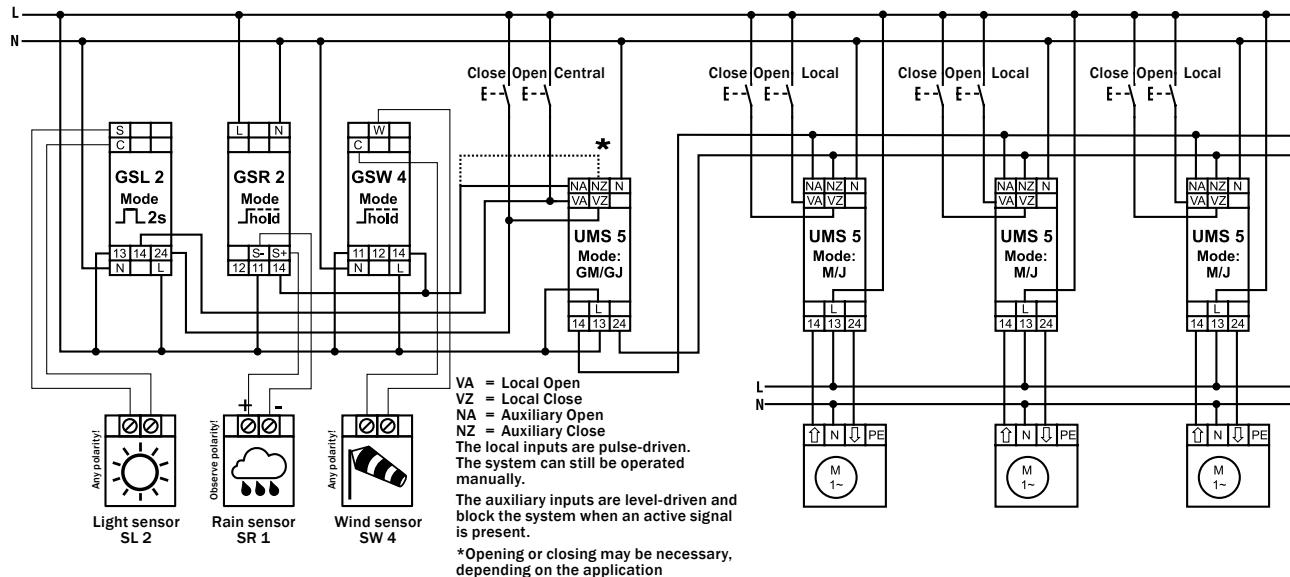
The various limit switches are connected to the VA/VZ or NA/NZ inputs of the central controller.

Safety-related actuation signals for rain or wind **must be connected to the auxiliary inputs as continuous signals**. This ensures that the system is locked out for optimal protection against user errors.

Actuation signals not related to safety, such as automatic shading or twilight operation, are **connected to the local inputs as momentary pulse signals**.

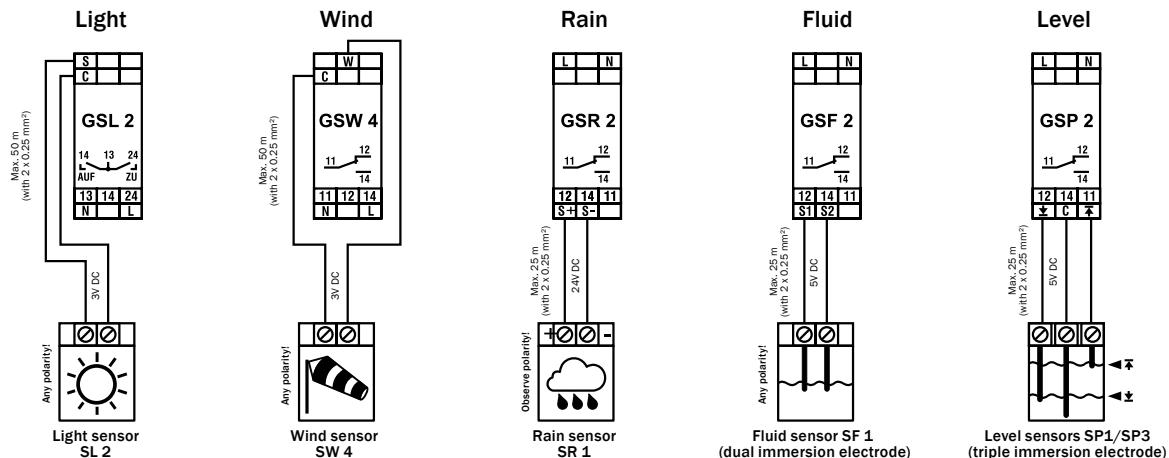
In this case the system remains fully under control of the user.

Examples of light, rain and wind limit switches connected to a central controller



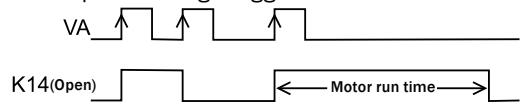
Motor controllers

Overview of available limit switches and sensors

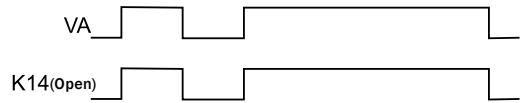


UMS 5 / UMS U5 function diagrams

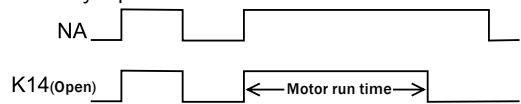
All operating modes and set motor running time:
local inputs are edge-triggered and time-monitored



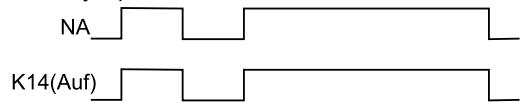
Motor running time in pushbutton mode: local inputs are level-controlled and **not** time-monitored



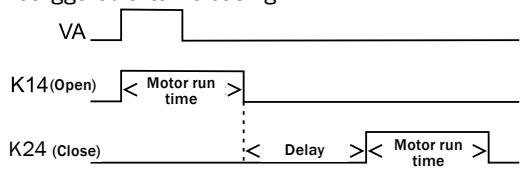
Operating modes M and J with motor running time:
auxiliary inputs are level-controlled and time-monitored



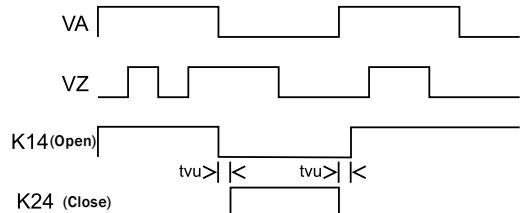
Modes GM and GJ or motor running time set to „T“:
auxiliary inputs are level-controlled and not time-monitored



When a reverse pulse time is set, the reversal is started or retriggered after releasing VA

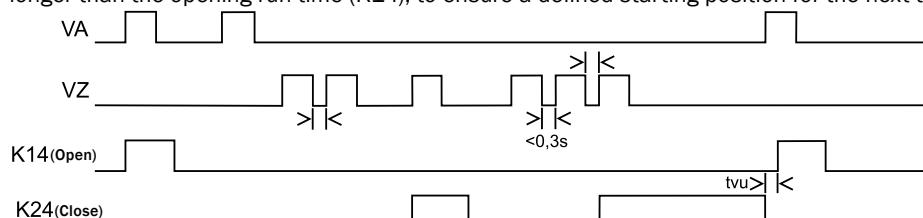


t_{vu} = Switchover pause (0.6s) between K14 and K24
for motor protection (mechanical stress release). As one local button is active, the other local button is ignored:

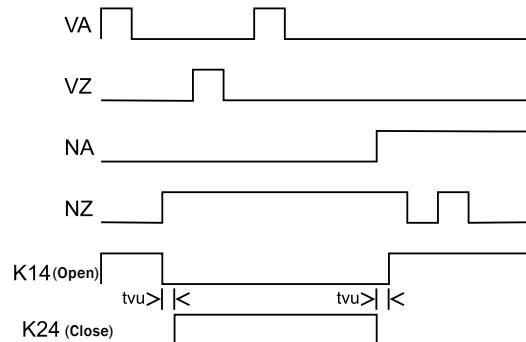


Mode SJ (does not apply UMS 5P):

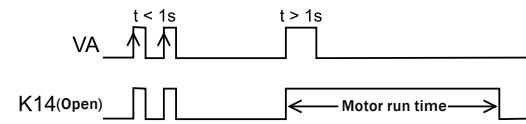
Actuating a local input once, the motor will start turning in the selected direction with the set duration (0.1 to 1.4s). Actuating a local input 3 times in direct succession, the set motor run time (3 to 240s) is started. Closing run time (K24) lasts 25% longer than the opening run time (K14), to ensure a defined starting position for the next turn.



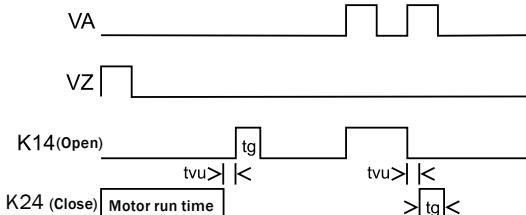
As one local button is active, the other local button is ignored. NA overrides NZ:



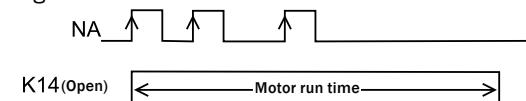
Louver blind mode: local inputs are level-controlled in response to short press of button and edge-controlled when button held down



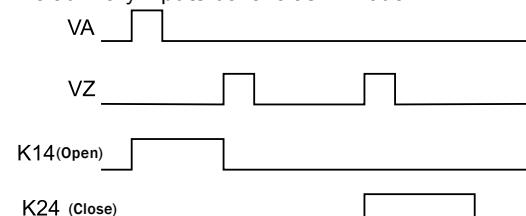
Set louver blind counter-run: counter-running (t_g) is triggered by timeout of VZ or by manual stop



Operating mode Z with motor running time: auxiliary inputs are edge-controlled and time-monitored



U4 mode (applies only to UMS 5P): When actuating VA and VZ alternately, the motor will not directly turn direction but stops the motor. The auxiliary inputs behave as in mode Z.



Technical data

Operating voltage	230 V 50/60 Hz 10% respectively 24 V DC/AC 10 %
Control voltage	= operating voltage Only UMS 5P: NA/NZ inputs are 12-230V UC capable
Power consumption	passive: 0.2W / active: 0.4W
Run time	3 - 240s
Automatic closing time	3s - 30min
Reverse pulse	0.1 - 1.3s
Relay switching dead time	0.6s
Relay output UMS 5	2 NO potential-free 10A 250V AC
Relay output UMS U5	2 NO on operating voltage 10A 250V AC
Switch rating	See data sheet "Relay contact load ratings"
Ambient temperature	-10°C to +45°C
UMS 5 mounting	Click-mount on standard 35-mm rail (EN 60715)
UMS 5 Connections	Socket terminals with captive screws M3.5
- Clamping range	0.5 mm ² - 4.0 mm ²
- Strip length	6.0 mm - 6.5 mm
- Screwing torque	0.80 Nm
UMS U5 Connections	Socket terminals with captive screws M3
- Clamping range	0.5 mm ² - 2.5 mm ²
- Strip length	6.5 mm - 7.0 mm
- Screwing torque	0.50 Nm
UMS 5 outside dimensions	18 x 88 (45) x 58 mm ³
UMS 5 installed depth	55 mm
UMS U5 outside dimensions	43 x 43 x 18,5 mm ³
UMS 5 weight	approx. 80g
UMS U5 weight	approx. 45g
RAL colour	Grey 7035 / Green 6029

Order data

Part no.	EAN	Type	Designation
UMS504	4 046929 401012	UMS 5 (24V UC)	Open/Close-controller 24V UC, 2 NO pf 10A/250V AC
UMS509	4 046929 401029	UMS 5 (230V AC)	Open/Close-controller 230V AC, 2 NO pf 10A/250V AC
UMSU59	4 046929 401036	UMS U5 (230V AC)	Open/Close-controller 230V AC (UP), 2 NO 10A/230V AC
UMSU5V	4 046929 401166	UMS U5 (12-24V UC)	Open/Close-controller 12-24V UC (UP), 2 NO 10A/230V AC
UMS5P9	4 046929 401128	UMS 5P	Open/Close-controller 230V AC, 2 NO pf 10A/250V AC, NA/NZ 12-230V UC

Info

The UMS U5 is also available as a variant with additionally integrated radio control, see type FE3 M

Accessories

Part no.	EAN	Type	Designation
MGRU29	4 046929 401050	MGR U2	Motor group relay, 230V AC, 4 NO (for 2 motors) (FMD)
MGR209	4 046929 401142	MGR 2	Motor group relay, 230V AC, 4 NO (for 2 motors)
MGR409	4 046929 401159	MGR 4	Motor group relay, 230V AC, 8 NO (for 4 motors)